Author Index

Anastasiow, N.: *see* Fischler, A. S.

Anderson, R. D.: Children's Ability to Formulate Mental Models to Explain Natural Phenomena, 326

Asher, W.: *see* Burkey, B.

Ausubel, D. P.: An Evaluation of the Conceptual Schemes Approach to Science Curriculum Development, 255

Blackwood, P. E.: Science Teaching in the Elementary School, 177

Blankenship, J. W.: Biology Teachers and Their Attitudes Concerning BSCS, 54

Bledsoe, J. C.: *see* Brown, D. R.

Brakken, E.: Intellectual Factors in PSSC and Conventional High School Physics, 19

Brown, D. R., G. E. Michaels, and J. C. Bledsoe: An Experiment in the Use of Film Slides in an Introductory Course in Microbiology, 333

Burkey, B., and W. Asher: A Comparison of Ninth Grade Accelerated Students and a Group of Tenth Grade Students in Their Ability to Comprehend Biology, 66

Burkman, E.: At Florida State University, 107

Cooley, W. W.: Project TALENT Implications for Science Education, 211

see Lee, E. C.

Corbin, F.: *see* Finger, J. A. Jr.

Crumb, G. H.: Understanding of Science in High School Physics, 246

Dickinson, J. C.: At The University of Iowa, 153

Dillon, J. A. Jr.: *see* Finger, J. A. Jr.

Eccles, P. J.: Teacher Behavior and Knowledge of Subject Matter in Sixth Grade Science, 345

Finger, J. A. Jr., J. A. Dillon, Jr., and F. Corbin: Performance in Introductory College Physics and Previous Instruction in Physics, 61

Fischler, A. S., and N. J. Anastasiow: In-Service Education in Science (a Pilot): The "School within a School," 280

Fowler, H. S.: At The Pennsylvania State University, 170

Gawley, I. H.: At Montclair State College, 156

George, K. D.: The Effect of BSCS and Conventional Biology on Critical Thinking, 293

Grobman, H.: Identifying the "Slow Learner" in BSCS High School Biology, 3

Haney, R. E.: The Development of a Non-Verbal Test of Childrens' Concepts of Animals, 198

Howe, R. W., and J. S. Richardson: At The Ohio State University, 136

Hurd, P. D.: At Stanford University, 122

Johnson, P.: At Cornell University, 144

Kleinman, G. S.: Teachers' Questions and Student Understanding of Science, 307

Koelsche, C. L.: At The University of Georgia, 162

Lahti, A. M., and R. R. McLeod: At Western Washington State College, 112

Lee, A. E., and P. Westmeyer: At The University of Texas, 127

Lee, E. C., and W. W. Cooley: Career Development of Science Teachers: A Cooperative Study with Project TALENT, 300

Lepper, R. E.: Using the OAIS to Select Participants for High School Institutes, 346

Lockard, J. D.: At The University of Maryland, 117

McLeod, R. R.: *see* Lahti, A. M.

Michaels, G. E.: *see* Brown, D. R.

Moore, M. R.: A Survey of College Biology Departments Regarding Introductory Course Curricula and Advanced Placement Practices, 235

Novak, J. D.: A Model for the Interpretation and Analysis of Concept Formation, 72

At Purdue University, 147

Nelson, J. L.: *see* Scandura, J. M.

Olstad, R. G.: Secondary School Biology Achievement as Related to Class Period Length and Teaching Method, 204

Palmer, E. L.: Accelerating the Child's Cognitive Attainments through the Inducement of Cognitive Conflict: An Interpretation of the Piagetian Position, 318

Pella, M. O.: Some Problems in Science Education, 90

At The University of Wisconsin, 166

Rainey, R. G.: The Effect of Directed versus Non-Directed Laboratory Work on High School Chemistry Achievement, 286

Redfield, D. D.: The Philosophical Basis of Modern Science, 265

Richardson, J. S.: *see* Howe, R. W.

Robinson, J. T.: Science Teaching and the Nature of Science, 37

Rowe, M. B.: Influence of Context-Learning on Solution of Task-Oriented Science Problems, 12

Scandura, J. M., and J. L. Nelson: The Emerging Research Role of the Subject Matter Educator, 51

Schefler, W. C.: A Comparison between Inductive and Illustrative Laboratories in College Biology, 218

Selberg, E. M., and M. F. Vessel: At San Jose State College, 141

Smith, M. D.: Non-Wordal Programing in Mathematics and Science, 26

Sutman, F. X., and M. Yost: A Modified Team Approach in Seventh Grade Science, 275

Thier, H. D.: A Look at a First Grader's Understanding of Matter, 84
Trent, J.: The Attainment of the Concept "Understanding Science" Using Contrasting Physics Courses, 224
Vessel, M. F.: *see* Selberg, E. M.
Walters, L.: Ninth vs. Tenth Grade Biology—A Follow-Up Study, 230
Westmeyer, P.: *see* Lee, A. E.
Winter, S. S.: Model Programs for the Education of Teachers in Science: A Progress Report from the Eastern Region of AETS, 99
and R. R. Woock: At State University of New York at Buffalo, 130
Woock, R. R.: *see* Winter, S. S.
Yost, M.: *see* Sutman, F. X.

JOURNAL OF RESEARCH IN SCIENCE TEACHING

Volume 3 1965

Editor: J. Stanley Marshall

Department of Science Education
The Florida State University, Tallahassee, Florida

Editorial Advisory Board

J. DARRELL BARNARD
New York University
New York, New York

WILLIAM COOLEY
Harvard University
Cambridge, Massachusetts

PAUL deH. HURD
Stanford University
Palo Alto, California

JOSEPH F. JORDAN
John Wiley & Sons, Inc.
New York, New York

EUGENE C. LEE
Emory University
Atlanta, Georgia

JOHN MASON
Michigan State University
East Lansing, Michigan

SIDNEY ROSEN
University of Illinois
Urbana, Illinois

IRWIN L. SLESNICK
Western Washington State College
Bellingham, Washington

HERBERT A. SMITH
Colorado State University
Fort Collins, Colorado

FRANK X. SUTMAN
Temple University
Philadelphia, Pennsylvania

STEPHEN S. WINTER
University of Buffalo
Buffalo, New York

ROBERT E. YAGER
University of Iowa
Iowa City, Iowa

Published under the auspices of

NATIONAL ASSOCIATION FOR RESEARCH IN SCIENCE TEACHING and ASSOCIATION FOR THE EDUCATION OF TEACHERS IN SCIENCE

by John Wiley & Sons, Inc., New York • London • Sydney

JOURNAL OF RESEARCH IN SCIENCE TEACHING

Volume 3, 1965

ISSUE 1, MARCH

From the Editor 1
Identifying the "Slow Learner" in BSCS High School Biology: Hulda Grobman 3
Influence of Context-Learning on Solution of Task-Oriented Science Problems: Mary Budd Rowe 12
Intellectual Factors in PSSC and Conventional High School Physics: Earl Brakken 19
Non-Wordal Programing in Mathematics and Science: M. Daniel Smith 26
Science Teaching and the Nature of Science: James T. Robinson 37
The Emerging Research Role of the Subject Matter Educator: Joseph M. Scandura and Jack L. Nelson 51
Biology Teachers and Their Attitudes concerning BSCS: Jacob W. Blankenship 54
Performance in Introductory College Physics and Previous Instruction in Physics: John A. Finger, Jr., John A. Dillon, Jr., and Frederic Corbin 61
A Comparison of Ninth Grade Accelerated Students and a Group of Tenth Grade Students in Their Ability to Comprehend Biology: Betty Burkey and William Asher 66
A Model for the Interpretation and Analysis of Concept Formation: J. D. Novak 72
A Look at a First Grader's Understanding of Matter: Herbert D. Thier 84
Some Problems in Science Education: Milton O. Pella 90
Book Review
Values in American Education, a Phi Delta Kappa Symposium Report, Theodore Bramfeld and Stanley Elam, Eds. Reviewed by Addison E. Lee 93

ISSUE 2, JUNE

Guest Editorial 95
From the Editor 98
Model Programs for the Education of Teachers in Science: A Progress Report from the Eastern Region of AETS: Stephen S. Winter 99
SECONDARY SCHOOL SCIENCE TEACHER EDUCATION At Florida State University: Ernest Burkman 107

At Western Washington State College: Arnold M. Lahti and Raymond R. McLeod 112
At The University of Maryland: J. David Lockard 117
At Stanford University: Paul DeHart Hurd 122
At The University of Texas: Addison E. Lee and Paul Westmeyer .. 127
At State University of New York at Buffalo: Stephen S. Winter and Roger R. Woock 130
At The Ohio State University: Robert W. Howe and John S. Richardson 136
At San Jose State College: Edith M. Selberg and M. F. Vessel 141
At Cornell University: Philip Johnson 144
At Purdue University: Joseph D. Novak 147
At The University of Iowa: James C. Dickinson 153
At Montclair State College: Irwin H. Gawley 156
At The University of Georgia: Charles L. Koelsche 162
At The University of Wisconsin: Milton O. Pella 166
At The Pennsylvania State University: H. Seymour Fowler 170

ISSUE 3, SEPTEMBER

From the Editor 175
Science Teaching in the Elementary School: A Survey of Practices: Paul E. Blackwood 177
The Development of a Non-Verbal Test of Childrens' Concepts of Animals: Richard E. Haney 198
Secondary School Biology Achievement as Related to Class Period Length and Teaching Method: Roger G. Olstad 204
Project TALENT Implications for Science Education: William W. Cooley 211
Comment and Criticism 216
Sidney Rosen 216
A Query About Some Science Education Problems: Arnold B. Grobman 216
A Comparison Between Inductive and Illustrative Laboratories in College Biology: William C. Schefler 218
The Attainment of the Concept "Understanding Science" Using Contrasting Physics Courses: John Trent 224
Ninth vs. Tenth Grade Biology—A Follow-Up Study: Louis Walters 230
A Survey of College Biology Departments Regarding Introductory Course Curricula and Advanced Placement Practices: Maxine Ruth Moore 235
Understanding of Science in High School Physics: Glenn H. Crumb. 246
Books Received 251

ISSUE 4, DECEMBER

From the Editor 253
An Evaluation of the Conceptual Schemes Approach to Science Curriculum Development: David P. Ausubel 255
The Philosophical Basis of Modern Science: David D. Redfield 265

A Modified Team Approach in Seventh Grade Science: Frank X. Sutman and Michael Yost 275
In-Service Education in Science (a Pilot): The "School within a School": Abraham S. Fischler and Nicholas J. Anastasiow 280
The Effect of Directed versus Non-Directed Laboratory Work on High School Chemistry Achievement: Robert G. Rainey 286
The Effect of BSCS and Conventional Biology on Critical Thinking: Kenneth D. George 293
Career Development of Science Teachers: A Cooperative Study with Project TALENT: Eugene C. Lee and William W. Cooley 300
Teachers' Questions and Student Understanding of Science: Gladys S. Kleinman 307
Accelerating the Child's Cognitive Attainments through the Inducement of Cognitive Conflict: An Interpretation of the Piagetian Position: Edward L. Palmer 318
Children's Ability to Formulate Mental Models to Explain Natural Phenomena: Ronald D. Anderson 326
An Experiment in the Use of Film Slides in an Introductory Course in Microbiology: Dean R. Brown, Gene E. Michaels, and Joseph C. Bledsoe 333
Research Reports
Teacher Behavior and Knowledge of Subject Matter in Sixth Grade Science: Priscilla J. Eccles 345
Using the OAIS to Select Participants for High School Institutes: Robert E. Lepper 346
Books Received 348
Author Index 349